

EXHIBIT 3

FILED UNDER SEAL

*November 30, 2022 Opening Expert Report
of Dr. Kevin C. Almeroth*

1 Patent at Fig. 1, 4:39-5:2. Additionally, as shown in Figure 1, the LAN 108 may interface with a
2 “wide area network” (WAN) such as the Internet. *Id.*

3 108. Unlike the audio players in “conventional multi-zone audio system[s],” the “zone
4 players” in this new type of networked multi-zone audio system are data network devices that each
5 have a processor, memory, circuitry for processing digital audio data and outputting audio, and a
6 network interface for communicating over a data network with other data network devices. ’885
7 Patent at FIG. 1, 4:49-6:27. For instance, each “zone player” is capable of communicating over
8 LAN 108 with “controlling devices” 140, 142, other “zone players,” and a local audio source such
9 as “computing device” 110. *Id.* Additionally, each “zone player” is capable of communicating
10 over the Internet (via LAN 108) with a remote audio source that provides “streaming audio” (such
11 as the YouTube Music and Spotify services that exist today). *Id.* This networked multi-zone audio
12 system provided a new paradigm that advanced over the “conventional multi-zone audio
13 system[s]” discussed in the background of the ’885 and ’966 Patents that were connected by
14 speaker wire to a centralized A/V receiver and did not have the capability to communicate over a
15 data network or process digital data, which made such systems “inflexible,” “difficult” to use, and
16 “not [] suitable” for many users. *See* ’885 Patent at 1:46-2:16.⁵

17 109. Each of the “zone players” in the networked multi-zone audio system described in
18 the ’885 and ’966 Patents (and in Sonos’s own system at the time) was capable of playing back
19 audio individually (*i.e.*, on its own). *See, e.g.*, ’885 Patent at 4:44-5:2, 5:21-6:27, 6:39-43. In
20 addition, each of the “zone players” in the networked multi-zone audio system described in the
21 ’885 and ’966 Patents (and in Sonos’s own system at the time) was capable of being grouped

22 ⁵ I understand that the description of the networked multi-zone audio system in the ’885 and ’966
23 Patents was based on Sonos’s own networked multi-zone audio system, which Sonos began
24 working on in 2002 and commercially released in January 2005 under the name “The Sonos Digital
25 Music System.” *See, e.g.*, <https://www.sonos.com/en-us/how-it-started>; Millington Dep. Tr. at
26 113:14-20. In Sonos’s networked multi-zone audio system that was released in January 2005, the
27 “zone players” were called “ZonePlayers” (model number “ZP100”), and there were two types of
28 “controlling devices” that could be used with the ZonePlayers – a computer installed with Sonos’s
“Desktop Controller” software or a dedicated “Sonos Controller” handheld device (model number
“CR100”). Sonos’s networked multi-zone audio system that was released in January 2005
provided a new paradigm that advanced over the “conventional multi-zone audio system[s]”
described in the ’885 Patent.

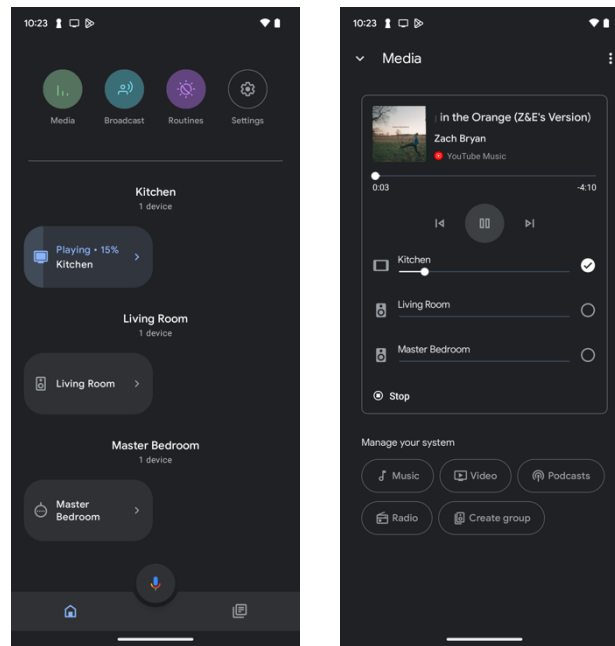
1 together with one or more other “zone players” so that the grouped “zone players” become
2 configured for synchronous playback. *Id.* at 5:16-20, 5:57-6:7, 6:43-48, 7:35-41, 7:58-9:30, 10:4-
3 11:20. In this respect, each “zone player” operated in one of two states at any given time: (i) a
4 first state in which the “zone player” is not actively grouped with any other “zone player” but
5 rather is configured to play back audio individually (*i.e.*, a non-grouped or standalone mode),
6 whether or not the “zone player” is engaging in active playback, or (ii) a second state in which the
7 “zone player” is actively grouped with one or more other “zone players” such that it is configured
8 for synchronous playback as part of that group (*i.e.*, a grouped mode), whether or not the group is
9 engaging in active playback. *Id.*

10 110. The '885 and '966 Patents go on to explain that in a networked multi-zone audio
11 system like the one described in the '885 and '966 Patents, one process for grouping “zone players”
12 together for synchronous playback involved a user selecting a particular set of “zone players” to
13 group together in an ad-hoc manner, one-by-one, when the user wishes to listen to audio across
14 the set of “zone players,” which would then create a temporary, ad-hoc group. *Id.* at 8:30-45; '407
15 Provisional, at App'x A, 1. The '885 Patent also notes that this ad-hoc grouping process was being
16 utilized by the commercial embodiment of Sonos's networked multi-zone audio system at the time
17 of the invention of the '885 and '966 Patents in 2005. *See* '885 Patent at 8:42-44 (referring to this
18 ad-hoc grouping process as the “current mechanism”); '407 Provisional, at App'x A, 1 (explaining
19 that “[c]urrently in the Sonos UI, zone groups are created by manually linking zones one at a time
20 until the desired zone grouping is reached”). However, the '885 and '966 Patents note that this
21 process “may sometimes be quite time consuming,” because each time the user wishes to use a
22 different group for synchronous playback, the user has to repeat the ad-hoc process of selecting
23 each of the “zone players” to include in the group even if it is a grouping of “zone players” that
24 has previously been formed and activated by the user on many other occasions in the past. '885
25 Patent at 8:42-45, 54-56. This was a byproduct of the fact that a group of “zone players” created
26 using the ad-hoc process was temporary – it only existed during the limited time that the group
27 was activated for playback, and as soon as a user wanted to use a “zone player” in an existing
28 group for individual playback or wanted to create a new group that included one or more of the

1 211. Google's corporate designee Justin Pedro confirmed that when creating a second
2 speaker group such as this that has at least one overlapping Google player, there is no difference
3 in how the process for creating the second speaker group is carried out from either a "code point
4 of view" or a "user interface point of view." *See, e.g., 7/7/2022 J. Pedro Dep. Tr. at 165:18-166:17.*

5 212. There are several notable things that I observed during the process of creating and
6 saving these two speaker groups. First, I observed that the act of creating and saving a new speaker
7 group does *not* change the operating mode of the Accused Google Players that are placed into the
8 speaker group – the three exemplary Accused Google Players that were selected for inclusion in
9 these new speaker groups each continued to operate in standalone mode even after the speaker
10 groups were created, as opposed to transitioning into a grouped mode, and the "Kitchen" player
11 also continued to engage in active playback of audio content while in standalone mode. This
12 continued standalone mode operation demonstrates that a speaker group is a grouping of Accused
13 Google Players that is not activated for synchronous playback at the time of creation, but rather is
14 predefined and saved for future use, which enables the previously-saved, predefined grouping to
15 be activated for synchronous playback at a later time when it is selected for launch via an Accused
16 Google Controller.

17 213. Second, I observed that it is possible to include the same Accused Google Player
18 as a member in multiple different speaker groups having different memberships. Specifically, in
19 the case of the 11/30/2022 Google test system, the "Kitchen" player was included in both of the
20 "Morning" and "Evening" speaker groups, whereas the "Master Bedroom" player was only
21 included in the "Morning" speaker group and the "Living Room" player was only included in the
22 "Evening" speaker group. Below are screenshots of the "Group settings" pages for the "Morning"
23 and "Evening" speaker groups, which illustrate this group membership:
24
25
26
27
28



The screenshot on the left is of the Google Home app's main page while the screenshot on the right is of the Google Home app's Media tab.

415. The evidence I have reviewed also confirms that an Accused Google Player operating in a standalone mode will continue to operate in that standalone mode unless and until a speaker group that includes the Accused Google Player is created, saved, and launched, at which point the Accused Google Player will transition from the standalone mode to a grouped mode. *See, e.g.*, GOOG-SONOSWDTX-00048962-66 at 64-65 (explaining that a Accused Google Player updates its “prefs file” when it receives a “join_group” message but does not begin operating as part of that speaker group unless and until the speaker group is selected for launch); GOOG-SONOSWDTX-00040384-96 at 84-89 (describing the separate processes for “[c]reating/configuring a group” and then subsequently “[c]asting to a group” that has previously been saved when a “user selects the group as the cast target”); GOOG-SONOSWDTX-00048792-838 at 802 (explaining that each Cast receiver device “can be a member of more than one group” and that “[e]ven if a device is part of a group(s) it will still be available for casting as a standalone device”); GOOG-SONOSNDCA-00056732-77 at 56-62 (showing that a Cast receiver does not begin operating as part of a previously-saved speaker group until the speaker group is selected for

1 launch at a Cast sender); 5/10/2022 K. MacKay Dep. Tr. at 116:10-13, 117:4-15 (explaining that
2 “a newly created speaker group is not automatically launched at the time that it is created” but
3 rather “exists in an unlaunched state” (or “inactive” state)), 113:22-114:18 (explaining that
4 “whether or not a device is a member of a group or multiple groups, you can still cast to it as a
5 single device” (or “standalone device”)), 191:22-195:6 (confirming that when a new speaker group
6 of Accused Google Players is created, “the Cast state of [a] player being included in the new group
7 will not change” regardless of whether or not the player is actively playing music individually or
8 as part of a group), 198:1-7 (confirming that if a Accused Google Player “has a single device Cast
9 session established” prior to the creation of a speaker group that includes that Accused Google
10 Player, “the single device Cast session will remain after the group is created”); Section XI (testing
11 showing that the act of creating and saving a new speaker group does not change the operating
12 mode of the Accused Google Players that are added to the speaker group, and that a Accused
13 Google Player operating in a “standalone mode” will continue to operate in that mode and will not
14 begin operating in accordance with the speaker group until it is selected for launch).

15 416. As explained above, the Court also already found that each Accused Google Player
16 is capable of operating in “standalone mode” (including each Accused Google Player that lacks
17 built-in speakers) in granting Sonos’s motion for summary judgment of infringement of Asserted
18 Claim 1 of the ’885 Patent. *See* D.I. 309.

19 417. Lastly, the evidence I have reviewed establishes that each Accused Google Player
20 is a “zone player” under both parties’ proposed constructions of that term, which I addressed above
21 in Section XII.B.2.

22 418. For instance, as an initial matter, each Accused Google Player is an audio player
23 that is capable of outputting audio either in the form of sound from built-in speakers or in the form
24 of an audio signal that is provided to a connected, external device with speakers. *See* Google’s
25 Resp. to Sonos’s RFA No. 4 (Google admitting that each of the Accused Google Players “can
26 output audio either (i) in the form of sound waves from one or more integrated speakers and/or (ii)
27 in the form of an audio signal that is provided to a device connected to the [Accused Google
28 Player]”). In particular, each Home, Home Mini, Home Max, Nest Audio, Nest Mini, Nest Hub